Measuring the quality of managerial learning on the job

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Abstract This article describes the development of an instrument to measure the quality of managerial leaming on the job. The instrument can be used to analyse the quality of the individual leaming process on the job. The literature shows that two factors determine the quality of the leaming process; the leaming potential of the job context and the way in which the manager approaches their work. So the instrument has two components. The first component measures the four types of work experience that offer potential opportunities for individual leaming. These are Transitions, Task-related characteristics, Obstacles, and Support. The second component, the so-called learning behaviour, analyses, the way the individual approaches the potential leaming opportunities present in the job. This can also be divided into four categories: Emergent leaming, Planned leaming, Instruction oriented leaming, and Meaning oriented leaming. Based on these two components, an instrument has been developed to measure the quality of leaming on the job. This has been shown to be valid and reliable in a sample of European managers.

Keywords: Management leaming; leaming opportunities; learning behaviour; measurement

Introduction

Management development is a complex topic but most experts agree that it embodies two components, firstly "leaming-off-the-job", such as for example courses and MBA programmes, and secondly "learning-on-the-job", that is the leaming which comes from everyday work experience (Paauwe and Williams, 2001). This latter type of development has become the dominant topic in recent literature probably because continuous leaming is seen to form a crucial part of the new employment relationships between employer and employee (Weick, 1996).

Although leaming on the job has been seen as being of importance to managers' development, it is stil1 a relatively unexplored area. Clearly two variable are involved; the work situation and the individual but the extent to which each contribute to individual leaming on the job is stil1 unclear. The first step in solving this puzzle must be to develop valid and reliable measures in this area. Such measures can be used to

indicate possible developmental opportunities for any specific executive and thus can help both the individual concemed and their employer to manage their leaming process (Minor and Mezias, 1996; Spreitzer *et al.,* 1997).

Therefore the centra1 research question in this study was; How can the quality of potential leaming opporhmities in the work context and individual leaming behaviour be measured ?

In order to answer this question, we will first describe the theoretical framework comprising the individual leaming process at work. We define the relevant factors that form part of workplace leaming. We then concentrate on the two main factors identified; job characteristics that can be described as leaming opportunities and leaming behaviour exhibited by the individual concemed. After this, we will describe how we developed an instrument that measures these two factors.

Theoretical framework

Learning opportunities

The concept of *learning on the job* implies that the workplace offers learning opportunities (Nicholson and West, 1988; Davies and Easterby-Smith, 1984). Leaming opportunities can be described as specifíc characteristics of tasks and tûnctions that determine the amount of developmental opporhmities (Morrison and Brantner, 1992).

The most important work in this area has been carried out by researchers at the University of Chicago (McCall *et al,* 1983; 1988; McCauley *et al.,* 1993). They developed a profile of characteristics of a job that could contribute to the development and leaming process through interviewing with managers at various levels in a variety of organisations and at a broad range of organisational levels. Through analyses these interviews generated 133 items. To test whether these items were valid measures of leaming opportunities on the job, they constructed a questionnaire that was given to 692 managers aged between 22 and 63 years. Analysis of the results showed that the following characteristics of functions and tasks can be defined as learning opportunities at work (McCauley *et al.,* 1994):

- *Trunsitions, e.g.* a new function unusual responsibilities, or proving yourself
- *Task-related charucteristics,* e.g. creating change, high leve1 of responsibility, or non-authority relationships
- *Obstacles, e.g.* a difficult organisational environment, lack of management

support, lack of personal support, or a difficult boss

- *Support*, e.g. a supportive boss.

Table 1 gives a detailed description and some examples of the four categories of developmental job characteristics.

Insert Table 1

The first two categories are straightforward; the last two are to some extent paradoxical. The third category states that lack of boss support can stimulate personal development whilst the fourth category implies the opposite; that is that presence of boss support can enhance workplace leaming. The explanation is simple. A lack of boss support and guidance means that initiative and creativity are demanded of the subordinate, and this can contribute to the development of new skills and abilities. But presence of a supportive boss can also enhance leaming but in a different way. A supportive boss can be expected to give detailed feedback about an individual's development that can foster leaming and improve performance.

Based on the results of the Chicago studies, we concluded that transitions, task-related characteristics, obstacles, and support are the specific job characteristics that contribute to personal leaming and development at work and thus in our research are defined as leaming opportunities.

McCauley *et al.* developed a valid instrument for measuring these job characteristics among US managers. However in order to be able to use this instrument amongst managers from a different continent, we needed to do a reliability test among European managers.

As already mentioned, the described job characteristics *could* contribute to the development and growth of managers. They were potential opportunities to learn. However mere exposure to a learning opportunity does not mean that any leaming will actually take place. The amount of actual leaming engendered will depend on the way individuals learn from their work experience. This is called their leaming behaviour.

Learning behaviour

Leaming behaviour describes the way an individual approaches his or her work environment and work experiences (Reynolds, 1997; Vermunt, 1992; Kolb, 1984).

Most of the studies in the literature are concemed with leaming behaviour in a school or university context but we were able to find found two studies that focused specifically on the leaming behaviour of managers. These were by Megginson (1996) and Hoeksema et *al.* (1997) and both studies used factor analysis of survey data to develop their categories of leaming behaviour.

Megginson (1996) found two kinds of leaming behaviour among managers that he called *emergent* leaming and *planned* leaming. *Emergent* leaming involves unpremeditated leaming, characterised by retrospective exploration of experience. *Planned learning* is characterised by careful deliberation prior to action. It is more leaming than performance oriented.

Hoeksema also distinguished two kinds of leaming behaviours; meaning orientation and instruction orientation (Hoeksema *et al.,* 1997). *Meaning oriented learning* is a retrospective leaming approach that is characterised by a search for the deeper meaning of experiences. It is again more leaming than performance oriented. *Instruction oriented Zearning* in contrast is a leaming approach that is characterised by a search for superficial information, guidelines and expectations regarding tasks prior to taking action. It is more performance than leaming oriented.

Taking these studies as starting points, we will examine whether these four kinds of learning behaviour are, in fact, independent of each other. It is for example quite possible that the way managers leam can be characterised by both meaning oriented and instruction oriented leaming or planned leaming. This is because the first two refer to cognitive aspects of leaming while the two last mentioned stresses the behavioural aspects of leaming (Van der Sluis, **2000).**

Method

Data collection

In 1998 we conducted a survey among two groups of managers. The first group included Dutch workers who were employed with a variety of different companies in the Netherlands. They were drawn from participants in a management course run by a Dutch management centre. The response rate was 72 % (N=65). The respondents, mainly male (54), were on average 33 years old with slightly more than 8 years work experience. The educational leve1 of the 65 respondents was high since 5 1 had at least their bachelor degree.

The second group consisted with managers from more than twenty different nationalities who were working in different counties across Europe and who had all recently graduated (< 3 year) with MBAs from the Rotterdam School of Management. The response rate was 60 % (N=63). 89 % of these respondents were male and were on average 31 years old.

Both groups were similar as regards their age, educational background, career phase, and career aspirations.

Both groups received a questionnaire of which one part measured their learning opportunities and another part their leaming behaviour. The first group filled in a Dutch version and the second intemational group an English version of the same questionnaire.

Analyses

In order to develop the measure of leaming opportunities the answers of both groups on the McCauley et *al.* scale were utilised and the reliability of the measure was examined again using both sub samples.

The leaming behaviour measure was constructed using only the intemational sample since this group was felt to be more representative for European managers. However, the reliability of the scale was tested on both samples.

Measurement of learning opportunities

Design

For the measurement of leaming opportunities on the job, we built on the already mentioned Developmental Job Profile (DCP) as developed by McCauley *et al. (1993, 1994)* which has been shown to be a reliable (test-retest reliability between .81 and .93) and valid (intemal consistency α = .95) measurement instrument (N = 692) for US managers. Our goal was to examine the reliability of the instrument among a European sample and also to see whether -in order to increase its practicality- the large number of items (104) could be reduced.

The existing scale consisted of four categories as defined above (see Table 1). 15

items measuring Transitions (e.g. 'You have to manage something with which you are unfamiliar'), 21 items measuring Obstacles (e.g. 'You manage a business or unit with fmancial difficulties'), and 4 items measuring Support (e.g. 'Your boss gives you useful advice and support'). Task related characteristics were measured as follows: 31 items measuring Creating change (e.g. 'This job includes launching new organisational ventures'), 27 items measuring High leve1 responsibilities (e.g. 'Your success or failure in this job will be evident to higher management'), and 6 items measuring Non-authority relationships (e.g. 'To achieve your most important goals, you must influence peers at similar levels in other units, functions, etc.'). All questions could be answered on a 5-point scale from 1 (not at all descriptive for me) to 5 (extremely descriptive for me).

To examine the reliability of these four categories among European managers, we placed all 104 items in random order and analysed the responses from both our subsamples.

Results

With the use of reliability tests with Cronbach $a > .60$ as criterium, we developed a new scale of 'only' 42 items, spread over the four existing categories. The distribution of the 42 items over the different categories as well as the reliability of the scales per sample as presented in Table 2.

Insert Table 2

These results indicate that we have developed a reliable instrument that can be used to measure the potential learning opportunities in the work environment. This finding parallels previous work among similar samples which showed that the same 42 items appeared to form a reliable instrument to measure developmental job opportunities among European managers (Van der Sluis, 2000).

The intercorrelations between the different scales were similar for both sub samples (see Table 3).

Insert Table 3

As can be seen in the table, there are a number of significant intercorrelations between the different categories of leaming opportunities. This is of course hardly surprising since all four scales measure a specific category within the same overall concept; potential leaming opportunities on the job.

And there is, as expected, a significant negative correlation between obstacles and boss support. A possible explanation could be that there are more or less two groups of managers. One group of managers who are carefully supported and advised by their bosses and who thus experiences few obstacles. And another group of managers who are not supported and advised by their bosses since the latter want them to have the opportunity of showing their initiative and creativity in overcoming the obstacles facing them.

Below the scores on the amount of leaming opportunities per category is presented per group.

Insert Table 4

In the table it can be seen that there are only smal1 differences in the leaming environment of Dutch and European executives. These differences are tested with t-tests and none of the differences were significant. However, the scores of the Dutch group are for all four categories higher than the scores of the European group and they also have smaller standard deviations. This suggests that the Dutch executives are a more homogeneous group than the Europeans. This is of course hardly surprisingly since the European group are managing across a variety of different cultures and thus across much more divergent work environments.

Measurement of Learning behaviour

Design

We used the studies of Hoeksema et ***al.*** and Megginson as described above to develop our measure of leaming behaviour of managers. Both these studies were based on questionnaires. The questionnaire of Hoeksema et ***al.*** consisted of 23 items to be answered on a 5-point scale from 1 (never or only rarely true for me) to 5 (always or almost true for me) and Megginson's of 12 items to be answered on a 7-point scale from 1 (never true for me) to 7 (always true for me).

We combined the two existing questionnaires into one. It started with the 23 items of Hoeksema et *al.;* 12 items measuring Meaning oriented leaming (e.g. 'I try to find out how various aspects of the problems 1 come across link together'), and 11 items measuring Instruction oriented leaming (e.g.. '1 like to be told precisely what is expected from me'), all measured on the original 5-point scale. After this followed the 12 items of Megginson; 6 items measuring Planned learning (e.g. '1 set targets for my development') and also 6 items measuring Emergent leaming (e.g. 'It is important to be open to experience; then leaming will come'), all measured on the original 7-point scale.

Results

The data were examined using principal component analyses which showed that, based on the criterium eigen value > 1, four factors could be distinguished accounting for a total of 60.7 % of the variance. These four factors corresponded with the four kinds of leaming behaviour as originally distinguished by Hoeksema *et al.* and Megginson.

However, a second order factor analysis showed that there were two underlying factors that structure the four kinds of leaming behaviour. One factor with high loadings of Planned leaming (.688) and low loadings of Emergent leaming (-.776) and another factor with high loadings of Meaning oriented leaming (.874) and low loadings of Instruction oriented leaming (-.273).

From this second order factor analysis follows that these four kinds of learning behaviour are related to each other as presented in Figure 1.

Insert Figure 1

This 2-by-2 matrix suggests that the four kinds of learning behaviour are independent of each other (Van der Sluis, 2000) and thus that an individual can approach his working experience using all four kinds of leaming simultaneously. A high amount of planned leaming can occur in combination with a high amount of instruction-oriented leaming, etc.

The new scale that resulted from these factor analyses consisted of 15 items. The distribution of the items as well as the reliability of the scales per sample are presented in Table 5.

Insert Table 5

Based on these results we can conclude that we have developed a new instrument that can be used to measure the leaming behaviour of managers on the job.

The intercorrelations between the different kinds of leaming behaviour were similar among both the Dutch and European managerial sample.

Insert Table 6

It can be seen in Table 6 that most of the correlations are not significant or very low. This means that, as we discussed in respect of Figure 1, the four kinds of learning behaviour are independent dimensions. The only slightly significant positive correlation was found for the relationship between Instruction oriented leaming and Meaning oriented leaming ($r = .27$, $p = .03$). This suggests that managers who focus on performance and results and look for instructions are prospective but also at the same time reflective, in that they also look for the big picture and the underlying processes in the organisation. Maybe in order to be able to perform well in the future they also need to reflect on the past.

The scores on learning behaviour as measured among the Dutch and European sub samples are shown in Table 7.

Insert Table 7

The mean scores show that our two sub samples are not very different with respect to their leaming behaviour. The only significant difference is in Planned learning; where the Dutch group have on average a more planned approach to their leaming ($t = 3.91$, $p = .001$). This could be because they approach their personal leaming process on the job but also their career development in a more planned fashion than the European sample. The latter's higher score on emergent leaming shows that this aspect of being

able to plan is probably less important for them. They need to get ahead. But the specific path along which they will reach the top is irrelevant. The European sample seem to be high potentials who are extemally motivated, whereas the Dutch sample are more intrinsically motivated and develop along a clear career path in which they value individual leaming and career growth.

Conclusion

Learning on the job, management learning, and management development all depend on learning opporhmities and leaming behaviour (Richter, 1998; Reynolds, 1997). Therefore, any instrument that measures the quality of leaming on the job should consist of two parts. On the one hand a measure of learning opportunities present in the work environment and on the other hand a measure of learning behaviour of individuals.

Our measure of learning opportunities is based on previous studies on organisational factors that contribute to the individual leaming process at work. Although these studies were based on data that was collected among managers in the USA, this work could stil1 be used as a starting point for the measurement of learning opportunities in the European context.

Having devised a somewhat shorter scale than the original we were able to show that this instrument measured the same four categories of leaming opportunities as the American version and also had an acceptable leve1 of reliability. The scores on these four categories of our Dutch and European managers show that they have an adequate amount of leaming opportunities, especially in terms of support.

Our measure of learning behaviour was also based on previous work. Two studies existed that were focused on learning behaviour of managers and both distinguished two different kinds of leaming behaviour. We examined whether these were overlapping or complimentary.

We found indeed that four kinds of learning behaviour could be distinguished amongst our sample; Meaning oriented learning, Instruction oriented learning, Planned leaming, and Emergent leaming. These four approaches to workplace learning can be put in a two-by-two matrix as shown in Figure 1. The respondents in our study seemed to leam in a mainly emergent and meaning oriented way. The common denominator of these two kinds of leaming behaviour is 'retrospection'. From this we could hypothesise that

young, high educated managers in Western Europe learn primarily by reflecting on their work experiences.

Discussion

Workplace learning is characterised by a continuous interaction between the individual and the work environment. The way an individual learns affects the quality of the learning environment, and vice versa. With respect to learning behaviour this means that this depends on the context in which leaming takes place (Richter, 1998; Spreitzer et al., 1997; Reynolds, 1997; Van der Sluis, 1999; 2001).

This interaction between leaming behaviour and leaming opportunities underlines the need for further examination of the construct and of the predictive validity of the measurements of learning opportunities and learning behaviour. Because of the context dependence of leaming behaviour, our instrument should be used circumspectly. It is recommended that researchers using our scale should analyse the reliability of the measure among each specific sample they use. If further studies show the instrument to be reliable across different groups of employees and in different contexts, then we may conclude that it does indeed measure individuals' learning behaviour. On the other hand if further research show that the instrument is not reliable across different groups in different contexts, then we will have to examine which other ways of leaming on the job can be distinguished and to what extent the learning context actually affects learning behaviour.

Our instrument can be used in further research to analyse the dynamics of the individual leaming process on the job. For example, further research is needed to examine the effect of leaming opportunities on performance development. And, more research is needed to investigate whether the amount of learning opportunities do indeed contribute to career success as has been frequently suggested. (Arthur and Rousseau, 1996a; 1996b). Again only longitudinal research can contribute to a better understanding of the stability of a person's work context. It is quite possible that some people may prefer to work in a organisational context with relatively few leaming opportunities. The leve1 of leaming opportunities of these persons will then be stable over time but at a low level. A recent study of Van der Sluis (2000) indicated that there were strong suggestions that this is indeed sometimes the situation.

Further research on the possible influence of learning behaviour on workplace learning is also important. Some kinds of learning behaviour may be more effective in terms of later career success than others may. It is also possible that there is a particular way of learning that increases the amount of developmental job opportunities. Van der Sluis (2000) showed for example that planned learning has a positive effect on the individuals own perception of the personal career development as well as on the amount of task-related learning opportunities.

It is also important to examine the stability of individual learning behaviour. Recent comparative studies among undergraduate students, those near to graduation, those who had just graduated, and young managers with only a few years work experience, strongly suggest that there are differences in learning behaviour per life or career phase. Undergraduate students appeared to learn mainly in an instruction oriented and planned marmer whilst young manager were more emergent and meaning oriented learners. Almost and just graduated students were in between these two groups regarding their learning behaviour (Van der Sluis, 2000). On average, their leve1 of instruction oriented and planned learning behaviour was higher than the leve1 of the managers but they scored lower on these kinds of learning than undergraduates. On the other hand, their scores on emergent and meaning oriented learning behaviour were lower than the scores of managers but higher than the scores of students.

This picture corresponds with results from longitudinal research on the learning behaviour of managers with an MBA background. These results indicated that young MBAs had a high leve1 of instruction oriented and planned learning behaviour shortly after their graduation. However, after three or four years work experience this leve1 dropped whilst the leve1 of meaning oriented learning increased. Their leve1 of emergent learning did not change during their early career stage (Van der Sluis, 2001).

Finally, it would be useful to further explore the intercorrelation between learning behaviour and learning opportunities. Since the individual learning process on the job is an interactive process, we could expect that there are connections between specific characteristics of the learning context and the way people learn from their work. Recent studies support these notions (Yukl en Tracey, 1992; Dix en Savickas, 1995; Hoeksema, 1995; Ashford en Black, 1996; Spreitzer et *al.*, 1997). *More* specifically, planned learning seems to increase the amount of task-related learning opportunities. Perceived obstacles and transitions result in less instruction oriented learning. However, these findings are based on data measured only at two points in time

(ti=1998 and t_2=1999) (Van der Sluis, 2000). More extended longitudinal research is needed to shed more light on the causal relations and the dynamics of the interactive leaming process in the workplace.

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Table 1 *Examples and characteristics of developmental job components (Based on McCauley et al., 1994)*

Component	Example	Characteristic
Job transitions	Line to staff	Proving yourself
	Increases in scope	Novelty
	Radical job moves	Disruption of routine
	Changes in employer, status, or function	
Task-related characteristics		
Creating change	Start-up operation	Freedom to innovate
	Fix-it assigmnent	Change setting provides opportunities to develop effective approaches to leadership
High level of responsibility	Organisational level	Responsibility
	Large-scale operations	Visibility
		Opportunity for impact
Non authority relationships	Serving on task forces	Gaining cooperation without authority
	Making deals and coordinating among departments	
Obstacles	Diffcult boss	Psychological pain and discomfort
	Hardships	
	Negative experiences	
	Experience with crises and diversity	
support	Supportive boss	Psychological help and advice

Table 2 *Reliability and number of items per scale (Cronbach's a)*

	Transitions	Obstacles	Support	Task-related characteristics
Executives	.62	.78	.87	.82
MBAs	.72	.72	.76	.86
Nr. of items	7	8	3	24

Table 3 *Intercorrelations of learning opportunities per group of managers*

Correlations between learning opportunities of Executives (below the diagonal) and MBAs (above the diagonal)

		Transitions	Task-related characteristics	Obstacles	support
Transitions	Pearson Correlation	1.000	561*	260*	0
	Sig. (2-tailed)		.000	.045	.448
	N		57	60	61
Task-related characteristics	Pearson Correlation	.375*	1.000	.376*	.060
	Sig. (2-tailed)	.003		.004	.65?
	N	62		56	5?
Obstacles	Pearson Correlation	.315*	.478*	1.000	-.531**
	Sig. (2-tailed)	.013	.000		.000
	N	61	59		60
Support	Pearson Correlation	.161	.161	-.351*	1.000
	Sig. (2-tailed)	.204	.212	.005	
	N	64	62	62	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4 *Descriptives per category learning opportunities per group managers* (measured on an 5-pointscale (1 = 'not descriptive for me' to 5 = 'extremely descriptive for me').

Learning opportunities Executives

	N	Minimum	Maximum	Mean	S.D.
Transitions	64	1.52	3.95	2.5742	.5237
Task-related characteristics	62	1.60	3.81	2.8788	.4695
Obstacles	62	1.15	3.63	2.1339	.5019
Support	65	1.00	5.00	3.0846	.9157

Learning opportunities MBAs

	N	Minimum	Maximum	Mean	S.D.
Transitions	61	1.00	3.71	1.8618	.5791
Task-related characteristics	57	1.22	3.86	2.5068	.5712
Obstacles	60	1.13	3.88	2.0667	.6844
Support	61	1.00	5.00	2.9836	1.1776

Table 5 *Reliability and number of items per scale (Cronbach 's a)*

	Planned leaming	Instmction oriented leaming	Meaning oriented leaming	Emergent leaming
Executives	.80	.73	.66	.62
MBAs	.73	.73	.62	.62
Nr. of items	5	3	4	3

Table 6 *Intercorrelations of learning behaviour per group of managers*

Correlations between learning behavior of Executives (below the diagonal) and MBAs (above the diagonal)

		Emergent learning	Planned learning	Instruction oriented learning	Meaning oriented learning
hmergent leaming	Pearson Correlation	1.000	-.	171	.240
	Sig. (2-tailed)		.278	.188	.062
	N		60	61	61
Planned leammg	Pearson Correlation	.131	1.000	.169	-.114
	Sig. (2-tailed)	.301		.196	.384
	N	64		60	60
Instruction oriented leaming	Pearson Correlation	.035	.127	1.000	.273*
	Sig. (2-tailed)	.785	.315		.029
	N	64	65		62
Meaning oriented leaming	Pearson Correlation	-.125	.052	.272*	1.000
	Sig. (2-tailed)	.325	.678	.029	
	N	64	65	65	

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7 *Descriptives of learning behaviour per group of managers*

* Measured on a 7-point scale (1 = 'never true for me' to 7 = 'always true for me')

** Measured on a 5-point scale (1 = 'never true for me' to 5 = 'always true for me')

Learning behavior Executives

	N	Minimum	Maximum	Mean	S.D.
bmergent learning*	64	1.50	5.00	3.3828	.7113
Planned learning*	65	2.00	6.60	4.1662	1.0515
Instruction or. learning**	65	1.25	4.50	2.4462	.7545
Meaning or.. learning**	65	1.25	5.00	3.7654	.6759

Learning behavior MBAs

	N	Minimum	Maximum	Mean	S.D.
Emergent learning	61	2.00	7.00	5.3689	1.0120
Planned leaming	60	1.38	6.50	3.4500	1.1994
Instruction or. leaming	62	1.oo	4.50	2.7298	.8252
Meaning or. leaming	62	2.25	5.00	3.9073	.5906

Figure 1 *Learning behaviour of managers*